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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,146

06/27/2003

Joel P. DeSouza

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INTERNATIONAL BUSINESS MACHINES CORPORATION

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EXAMINER

CHEN, JACK S J

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,146

Applicant(s)

DESOUZA ET AL.

Examiner

Jack Chen

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/27/03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

In response to the communication filed on October 20, 2004 through January 18, 2005, claims 1-20 are active in this application.

Applicant's election without traverse of Species I (fig. 3) in the reply filed on October 20, 2004 is acknowledged. Claims 9-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 20, 2004.

NOTE: Applicant stated that 1) claims 1-14 read on the elected species I and 2) claim 1 is generic. Claims 9-14 do NOT read on the elected species I (fig. 3) because species I (fig. 3) does not have support for implanting ion into a substrate in a plurality of base dose implants conducted at a plurality of different energy levels as recited in claim 9. It appears that claims 9-14 read on the non-elected species II and it appears that claim 1 is generic. Therefore, these claims (9-14) are withdrawn from further consideration.

Information Disclosure Statement

The information disclosure statement filed on June 27, 2003 has been considered.

Oath/Declaration

Oath/Declaration filed on June 27, 2003 has been considered.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The disclosure is objected to because of the following informalities: in the specification, paragraph 0021, lines 6-7, it is unclear what is the unit for the thickness.

Appropriate correction is required.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, line 8, the phrase "said implanted substrate" lacks antecedent basis.

Re claim 1, line 8, the phrase "said ions" is unclear and indefinite (i.e., which ions? The ions from the base dose implant or second implant or both).

Re claims 3 and 5, the phrase "said implanted ions" is unclear and indefinite (i.e., which implanted ions? The ions from the base dose implant or second implant or both).

Re claim 6, the phrase "said implanting" is unclear and indefinite (i.e., which implanting step? The base dose implant or second implant or both).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Griffith, U.S./4,786,608.

Due to the 112 problems, as best can be understood by the examiner is as following: Griffith teaches a method for forming a semiconductor device, which comprises implanting ions (i.e., oxygen ions; col. 4, lines 1-13) into a substrate 10 in a base dose implant conducted at a first energy (i.e., 150-200 KeV; col. 4, lines 10-20) level (fig. 1); implanting ions (fig. 2; i.e., Si) into said substrate at a second energy (i.e., 120-140 KeV; col. 4, lines 33-37) level in a second implant while said substrate is held at room temperature (fig. 2; col. 4, lines 28-55); and annealing (col. 4, lines 55-68) the implanted substrate to cause said ions to be redistributed (i.e., ions redistributed to form layer 32 and 33) in said substrate; see figs. 1-4 and cols. 1-8 for more details.

Re claim 2, wherein the substrate comprises single crystal silicon (fig. 1; col. 4, lines 1-10).

Re claim 3, wherein the implanted ions comprise oxygen ions (fig. 1; col. 4, lines 1-10).

Re claim 4, wherein the second energy level (i.e., 120-140 KeV; col. 4, lines 30-40) is lower than the first energy (i.e., 150-200 KeV; col. 4, lines 10-20).

Re claim 5, wherein the implanted ions comprise oxygen ions (fig. 1; col. 4, lines 1-10).

Re claim 6, wherein the implanting and the annealing result in formation of a continuous buried oxide layer 13/33 (figs. 3-4) which provides electrical isolation for a SOI layer 14 of said substrate.

Re claim 7, wherein said first (i.e., 150-200 KeV; col. 4, lines 10-20) and second (i.e., 120-140 KeV; col. 4, lines 33-37) energy levels are in the range of 40 to 240 KeV.

Re claim 8, wherein a lower dosage of ions are implanted in said second implant ($3.3\text{E}12$ to $9\text{E}12$; col. 4, lines 50-55) than in said base dose implant (i.e., $1.6\text{E}18$ to $2.4\text{E}18$; col. 4, lines 10-15).

7. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Sadana et al., U.S./6,222,253 B1.

Due to the 112 problems, as best can be understood by the examiner is as following: Sadana et al. teaches a method for forming a semiconductor device, which comprises implanting ions into a substrate in a base dose implant conducted at a first energy level (fig. 1; col. 4, lines 10-50); implanting ions into said substrate at a second energy level in a second implant while said substrate is held at room temperature (fig. 2; col. 4, lines 50-67); and annealing the implanted substrate to cause said ions to be redistributed in said substrate (col. 5, lines 1-37); see figs. 1-11 and cols. 1-8 for more details.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chen whose telephone number is (571)272-1689. The examiner can normally be reached on Monday-Friday (9:00am-6:30pm) alternate Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead can be reached on (571)272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jack Chen
Primary Examiner
Art Unit 2813

February 4, 2005